1. This response to the Final Office Action of April 26, 2006 is accompanied by a signed RCE transmittal and fee payment.

2. The examiner objected to **Claims 37, 38, 44-50 and 52** under 35 USC 102(b) as being anticipated by Elstein et al. (US 4,702,475). **Claims 37** and **52** have been amended to indicate that the device of the current application utilizes dials in the user interface. The many preferred embodiments presented by Elstein et al. utilize triggers and switches in the user interface, but not dials (**Figures 1, 3, and 9**). Therefore the applicant submits that the user interface of the device of the present application utilizes a control element not present in Elstein et al. and so satisfies the conditions of USC 102(b).

3. The examiner objected to **Claims 37** under 35 USC 102(b) as being anticipated by Elstein et al. (US 4,702,475). This claim has been amended to indicate that the first dial sets the mean frequency of transitions between device states, the second dial the minimum hold time spent in each device state, and the plurality of switches the occupancy value of each device state. It further claims that the action of the device is specified by these two dials, the switches, and the internal program. The device of Elstein at al. does not disclose these concepts (transition frequency, minimum hold time, and state occupancy) and consequently provides no way for setting any of the these three parameters. Therefore the applicant submits that Claim **37** distinguishes over Elstein et al and so satisfies the conditions of 102(b).

4. The examiner objected to **Claims 37** under 35 USC 102(b) as being anticipated by Elstein et al. (US 4,702,475). Elstein et al. disclose a plethora of preferred embodiments which makes it somewhat difficult to formulate a short statement describing what the device(s) of Elstein actually do and don't do. The present device produces "a continuous series of device states which are always unpredictable in sequence and duration." Elstein et al. do not disclose any embodiment for which this statement holds true. The various parts of this statement which are not disclosed by Elstein will be analyzed in the following **Remarks 5-7**.

5. Elstein et al (US 4,702,475) do not disclose a preferred embodiment that produces a "continuous series of device states". In those embodiments which utilize triggers and a sort of roulette wheel mechanism to determine the next state (**Figure 1 element 46, Figure 2 elements 24 and 40, Figure 3 element 132, 8:23-30**) there is an unavoidable pause required after the "particular movement pattern" (**Abstract**) is completed: the user must move back to the start position to trigger the next state (**9:14-16**) or push the button on the remote control trigger (**8:33-37**) . Moreover, this series of embodiments is particularly predictable in duration since the start times are set by the trigger and the end time by either the same trigger (for instance, **8:34-49**), a second trigger (**5:12-14, 10:29-32**), or by a fixed duration timer associated with each lamp (**8:64-69, 10:55-59**). In the more complex microprocessor based embodiment there are pauses between each displayed state (**Figure 9 element 308, 3:66, 4:39-42, 4:58-62,11:21-26,11:42-48,11:58-59**), warm up and cool down pauses at the

beginning and end of each drill (**12:47-48**), and finally the drill simply stops at the end of it's preset duration (**13:56-58, 19:10-21, 25:25-29**) at which point the user must either select another drill from the control panel or the watchdog timer will shut the system down after a few minutes of inactivity (**Figure 16, 21:59-63**). Conversely, the device of the present application once turned on emits a continuous series of device states without any intervening pauses of any type whatsoever, and will continue to do so until it is turned off. Therefore the applicant submits that Claim **37** distinguishes over Elstein et al and so satisfies the conditions of 102(b).

6. Elstein et al (US 4,702,475) do not disclose a preferred embodiment that produces "a series of device states which are always unpredictable in sequence and duration". As noted above for triggered embodiments, the duration of a given state is predictable either ab initio, if it is completely controlled by trigger events (as the athlete knows where these are), or after a single observation if it is controlled by a fixed duration timer. Similarly, the microprocessor based embodiment employs a fixed duration timer for each lamp (**11:21-26, 11:42-48, 12:49-50, 12:56-61, 13:1-9, 13:48-55**). Once a user has seen a lamp lit in a drill that user can predict with 100% certainty the duration of that lamp the next time it is lit in the same drill. Conversely, the device of the present application defines via its two dials only the mean transition frequency between device states and the minimum hold time in each device state: the observed duration of a device state is a random quantity consistent with those two parameters. Therefore the applicant submits that **Claim 37** satisfies the conditions of USC 102(b).

7. Elstein et al (US 4,702,475) do not disclose a preferred embodiment that always produces "a series of device states which are always unpredictable in sequence and duration". With regards to sequence predictability there are two cases. The trigger type embodiments utilize a roulette wheel type mechanism (**9:53-55**) and the identity of that sequence is unpredictable, however, as described above, its duration is not unpredictable so it is not unpredictable in "sequence and duration". The microprocessor based sequence order randomness is much weaker. It is obtained within a drill containing a predefined and fixed sequence of states by picking a random start point (drill index) within that sequence, proceeding step by step to the end, and then picking another random start point (**Figures 18 and 27, 17:60-68, 18:44, 22:29-33**). Consequently having been through a drill once a user will be able to recognize the fixed pattern on subsequent passes through the same part of the fixed sequence. The content of the fixed sequence would become more and more clear on subsequent passes through the same drill. The only time the user could not predict the next state would be the first time a drill was run (the first time the fixed sequence is encountered) and on subsequent restarts for the first state or two until the current position in that fixed sequence became evident. If a user so desired and took explicit notes on the observed pattern it would be a trivial matter to predict the next state on subsequent passes through a particular drill. This clearly is not "always unpredictable in sequence". As described above, the duration of a given light is 100% predictable once that light has once been encountered, so the microprocessor based embodiment

is clearly not "always unpredictable in sequence **and** duration". Therefore the applicant submits that **Claim 37** satisfies the conditions of USC 102(b).

8. The examiner objected to **Claim 52** under 35 USC 102(b) as being anticipated by Elstein et al. (US 4,702,475). **Claim 52** is worded somewhat differently from **Claim 37** but has the same intent, it claims that the present device produces "a sequence of transitions between said device states which is always random in order and timing" (in paragraph b) and "thus continuously introducing unpredictable variation" (final paragraph). Consequently the arguments offered with regards to **Claim 37** in **Remarks 4-7** above apply equally to **Claim 52**. Therefore the applicant submits that **Claim 52** satisfies the conditions of USC 102(b).

9. The examiner objected to **Claim 38** under 35 USC 102 that both the device of Elstein and the device of the present application are made of durable materials appropriate for an athletic activity. However the applicant submits that since **Claim 38** modifies **Claim 37,** which describes a device that differs in both function and required elements from the device of Elstein, that **Claim 38** is valid.

10. The examiner objected to **Claim 44** under 35 USC 102 that both the device of Elstein and the device of the present application utilize microprocessors. However the applicant submits that since **Claim 44** modifies **Claim 37,** which describes a device that differs in both function and required elements from the device of Elstein, that **Claim 44** is valid.

11. The examiner objected to **Claims 45, 46, and 47** under 35 USC 102. These claims have been canceled.

12. The examiner objected to **Claim 48** under 35 USC 102 that Elstein discloses a device that can energize lamps either sequentially or randomly. However the applicant submits that since this claim modifies **Claim 45**, which itself modifies **Claim 37,** which describes a device that differs in both function and required elements from the device of Elstein, that **Claim 48** is valid.

13. The examiner objected to **Claim 48** under 35 USC 102 that Elstein discloses a device that can energize lamps either sequentially or randomly and cited **9:30-39**. However the applicant submits that Elstein actually describes no mechanism for lighting these lamps sequentially. In the cited text it says "sequentially completes the energizing circuits of these lamps" but in the very next sentence says "such lamps will remain in an unlit condition" (until triggered). Effectively in this embodiment of the device of Elstein the initial signal is picked by spinning a sort of electronic roulette wheel, and the initiating trigger determines where that wheel stops. The suggested rate for cyclic switch **134** is 10 KHz (**10:52-55**), which is appropriate for use with a separate initiation trigger to pick a lamp apparently at random, but not appropriate for actually displaying a sequence of lit lamps. Therefore the applicant submits that **Claim 48** is valid.

14. The examiner objected to **Claim 48** under 35 USC 102 that Elstein discloses a device that can energize lamps either selectively or sequentially. This claim refers

specificially to switch DP1,1 of the present specification, which "determines the device state order as sequential {0,1,2,3,0...} or random". Here random has the customary meaning of "having no order" (and so unpredictable), in distinction with "sequential", which is used to indicate a sequence having the single order illustrated by example. The microprocessor based embodiment of Elstein, discussed in **Remark 7** above, has the somewhat unusual distinction of being able to generate neither an entirely random (unpredictable) nor an entirely predefined (predictable) order of device states. The order is not entirely random because it starts and restarts at a random drill index within a predefined and fixed sequence at the end of each drill (**Figures 18 and 27, 17:63-68, 18:43-44, 22:29-33**). It is not entirely sequential (ordered) for the same reason: even if a drill was constructed with the fixed state order {1,2,3,4,5,6} the device of Elstein would still start at a random drill index (there is no way to disable this) so the resulting sequence might be {3*,4,5,6,4*,5,6,6*,1*,2,3,4,5,6} where * indicates the first states chosen by a random drill index. It is unfortunate that Elstein refers to this somewhat disordered middle ground as "truly random nature" (**17:64**), "random nature" (**22:32**) and "appears to be random" (**Abstract**) since it very much overstates the disorder which is actually provided by the device. Therefore the applicant submits that, since the device of Elstein cannot be configured to "set(s) an order of transitions between device states as sequential or random", that **Claim 48** is valid.

15. The examiner objected to **Claim 49** under 35 USC 102 that a keypad can be used to input the transition frequencies of the periods of response (**4:68-5:11**). However the applicant submits that since this claim modifies **Claim 37**, which describes a device that differs in both function and required elements from the device of Elstein, that **Claim 49** is valid.

16. The examiner objected to **Claim 49** under 35 USC 102 that a keypad can be used to input the transition frequencies of the periods of response (**4:68-5:11**). The applicant submits that Elstein discloses no feature corresponding to "rate of transitions between device states" and so consequently cannot switch this quantity between "fixed and randomly varying around a mean frequency". The timing of the embodiments of the device of Elstein for which triggers are not employed to terminate the state are fixed while the device is running a drill (**13:1-9**), as is the pause interval (**12:67-68**). The device of Elstein has no explicit transition frequency (specified in the frequency domain), only explicit lamp on durations (specified in the time domain). The present device sets a minimum hold time = HT and mean frequency of transitions = FT. To be consistent with these two settings the corresponding lamp on times will be randomly distributed from a minimum of HT to a maximum of ((2/FT)-HT). [This is most easily seen by considering a third value, the average hold time AH, which is by definition just the inverse of the mean frequency of transitions, or 1/FT. Given lamp hold times randomly distributed as described above the value of

AH = (((2/FT)-HT) + HT)/2 = (2/FT)/2 = 1/FT.] It is possible for the

microprocessor based embodiment of the device of Elstein through the keypad or a preprogrammed drill routine to set the duration of all lamps to the same value to obtain a metronome like, or "fixed frequency" behavior. However since the duration of each lamp (plus the fixed pause interval between lamps) does not change during a drill it is not possible to distribute the lamp on durations randomly in the required range during a drill, to obtain "randomly varying around a mean frequency." Therefore, the applicant submits that **Claim 49** is valid since it describes a function not present in the device of Elstein

17. Before discussing USC 103 rejections it will perhaps be helpful to list the many differences between the present device and that of Elstein et al. These differences are both structural and in the intended use of the devices. The major differences are:

1) The device of Elstein is a reaction training device used to indicate which "particular movement pattern an athlete is to execute" in response to its signals (**Abstract**), each such action having a "measured time period" (**Abstract**) and so a "start" and an "end", whereas the device of the present application is freely running and the signals it produces indicate changes in the athletic environment to which the athlete responds, but not necessarily with the action currently signaled (see the following **Remarks 18-20** for further clarification on this point);

2) The device of Elstein is solely a training device, whereas the device of the present application is also designed to be used during an athletic game or contest, and so consequently is freely running, signals omnidirectionally, and requires no user

interaction once it has been configured and turned on – it neither accepts nor requires triggers and makes no measurements of the athlete's actions, it is in fact oblivious to the athlete's presence;

3) The device of Elstein contains a required element which emits a distinct signal to indicate the end of each "particular movement pattern" (**Abstract, 4:5-12**), whereas the device of the present application lacks this element as it does not produce an "end" signal since its states alone do not mandate when a "particular movement pattern" is to be executed;

4) The device of Elstein incorporates a required trigger element that initiates the training drill, either a single "particular movement pattern" (**8:34-37, 9:14-20, 10:29-32**), or a compound drill consisting of multiple separate "particular movement patterns" (the Start key, **12:53-55**), whereas the device of the present application has no need for these elements and so omits them;

5) Some implementations of the device of Elstein contain one or more required trigger elements that time the response of the athlete to that signal (**Abstract, 10:29-32, 12:12-17**), whereas the device of the present application omits this element as for its intended use there are no analogous "particular movement patterns" to time;

6) The device of Elstein implements a "pause" period (**3:65-67, 12:67-68**) following the "end" signal to allow the athlete to reposition on the field back to a start position, in one embodiment "pause" is implemented by a trigger following multiple sequential "particular movement patterns" (**10:29-32**), whereas the device of the present

application neither implements nor requires such a "pause" since its states do not indicate when a "particular movement pattern" must begin or end;

7) The device of Elstein uses either a fixed duration timer (**Abstract, 10:63-65, 13:1-9**) to terminate each state in a drill, or terminates it with a trigger (**10:29-32**), whereas the device of the present application randomly varies the duration of each device state;

8) The randomness produced by the microprocessor embodiment of the device of Elstein is weak (see **Remark 7**) and so an athlete who ran the same drill repeatedly would eventually be able to predict with some accuracy the next state based upon those that preceded it, as well as the exact time the next signal would appear [since the current state completely determines that], whereas the order and duration of states presented by the device of the present application is unpredictable from observations of the preceding states;

9) The device of Elstein et al. requires user intervention during use: in some embodiments through the use of triggers (see above), and in the microprocessor embodiment, through the (re)selection of the drill to be performed, which if not accomplished in a timely manner, causes the watchdog timer to shut the device off **(Figure 16, 21:59-63)**.

Summary) The device of Elstein is used for a different purpose than the device of the present application, consequently it functions in a different manner. Each of Elstein's preferred embodiments discloses a requirement for one or more of the

following elements, none of which either occur in or are required by the device of the present application: audible "end" indicator, drill initiator triggers, drill selector, drill start key, watchdog timer, complex keyboard, fixed duration device state timers, fixed duration pause timers, fixed duration warm up/cool off timers, and device state end triggers. Additionally the randomness produced by the device of the present application is superior to that of the device of Elstein, as both the order and the timing of device states are always random and so are truly unpredictable.

18. Also before discussing 35 USC 103 objections it will perhaps be helpful to try to explain again what the device of the current application is used for. As stated in the Brief Summary of the Invention of the specification, "This device is to be employed in the training of athletes and the playing of athletic games. During these activities athletes observe and respond to signals that vary with time and are generated and displayed by the device." Additionally in the Background of the Invention, "enabling in training situations a better simulation of the timing and thought processes of the game in question." **Nowhere in the present specification does it say or imply that the athlete must respond with a particular physical action when presented with a given state, even if that state is associated in the training regime in force at that time with a particular physical action.** In fact most of the time the device of the present application is running the athlete will **not** be performing the currently signaled physical action. If the athlete does perform the action corresponding to a device state the duration of the signal is best thought of as a time window within which that action

must begin, analogous to a green traffic light, which indicates that a car may enter an intersection, but not that it must enter the intersection the instant the green light appears, or that the car must be fully out of the intersection before the light turns yellow. Three examples of the use of the present device are given in the next remark. This is all quite different from reaction training devices, where it is essential that the athlete immediately react in the way specified by the signal. For instance in the abstract of Elstein, "waits for an unknown light to be energized and must then react in a measured time period with the particular movement pattern to be executed in response to that particular light."

19. This remark contains 3 examples of use of the current device which illustrate how it differs from a reaction training device.

A) Consider the soccer dribbling drill. It defines four states and four corresponding actions (pass to the right, pass to the left, pass to either side, do not pass). As the athlete dribbles towards the cone it will be continuously changing states, just as a real defender would be feinting and otherwise signaling, or obfuscating, his intent. At a largish distance the athlete will observe the signals and perhaps modify his footwork or the rate of approach but will not then pass the ball no matter what the cone signals as the athlete is not yet in position to do so, as the athlete comes nearer to the cone the signal becomes more and more important (as would the proximity of a real player), and as the athlete finally comes within a distance where the ball can actually be passed around the cone the value of the signal becomes paramount. In the simplest

training regime at this point the athlete would attempt to get the ball around the cone in the manner currently indicated by the device. If a pass direction was signaled the athlete would go that way, if "no pass" then the athlete would dribble until an opportunity to pass occurred.

B) Other training regimes are both possible and likely. For instance, the training exercise "running up the right sideline" simulates a common situation where a player needs to pass on a particular side of a defender even if the player could physically pass on either side. In this training exercise, the athlete will only pass the ball around the cone to the right, even if when within range "pass to the left" is signaled, that is, he would delay his advance until either "pass to the right" or "pass to either side" appeared, and would then pass on the right.

C) Finally consider a training regime of "get through the hole", which simulates trying to outrun defensive players to penetrate through a hole in the defense, and if this fails, stop and pass the ball back to teammate. In this multiplayer exercise four cones are employed. Three cones are placed in a line, with each of the 4 states given equal occupancy, and a fourth cone is placed some distance away on a perpendicular line to form the top of triangle, and is set with occupancies: "pass on either side"=1, "do not pass"=7, others=0. A group of athletes form three queues, one behind each baseline cone. An athlete takes the ball at one of the 3 baseline cones and dribbles it as rapidly as possible towards the fourth cone. If the athlete arrives at that cone (or some other arbitrary mark in front of it) and that cone is not signaling "pass on either

side", which typically it won't be due to the occupancy values, the athlete stops, turns, and passes the ball back to another athlete standing near whichever one of the three base cones is signaling "pass on either side". A second athlete standing behind that cone then takes the passed ball and runs the same drill, while the first athlete circles around to the end of the queue of athletes standing behind the cone where he passed the ball. The point being that even though all four cones are continuously signaling throughout this exercise the actions the athlete actually takes, and the time at which these actions are executed, depend upon the rules of the training exercise (which are set by a coach or the athletes themselves), the athlete's position relative to the cone, and other possible factors.

20. Also before discussing 35 USC 103 objections and in light of **Remark 18** and the observation that most reaction training devices provide a means to time the resulting reaction, it may be helpful to consider what, if anything, the present device could time if it were provided with the extra elements necessary to make such a measurement. Referring to the first soccer dribbling drill of the preceding **Remark 19** there is no clear "start" position although one might arbitrarily define one 10 meters from the cone. "End" might then be reasonably defined as the time when the athlete finally puts the ball beyond the cone. In each trial the athlete will encounter a different order of device states signaled and each of these will also be of different duration. So the actual task performed, and consequently the time elapsed, would not be commensurable between any two measurements. The measurement could be made

but the comparison would be meaningless. This further illustrates the difference between the device of the present application and reaction training devices, for which such measurements are commensurable.

21. Also before discussing 35 USC 103 objections it will also be helpful to consider why the present device would work poorly as a reaction training device. Elstein defines the use of such a device: "the person waits for an unknown light to be energized and must then react in a measured time period with the particular movement pattern to be executed in response to that particular light." (**Abstract**). If pressed into service as an Elstein type reaction training device the present device suffers the following shortcomings:

A) It provide no pauses between movement patterns to allow the user to return to the starting position for further reaction training. Since the device also runs continuously if at least one of the "particular movement patterns" results in a net displacement in any direction (and most would) it would result in the athlete making a random walk (if the displacements can cancel) or a directed walk (if they do not cancel) away from the device. In many of the examples in Elstein the displacements were on the order of ½ to ¼ of the length of a tennis court – after a dozen or such movement patterns the poor user would either be driven into the net or be several tennis courts away from the signaling device. It's doubtful that many athletes would long use a device which orders them to move into obstacles or off the training field.

B) It does not support tailoring fixed duration reaction times appropriate for each

"particular movement pattern". Duration times are defined solely by minimum hold time and the mean frequency of transitions between states. The resulting random variation in signal times would be counterproductive, resulting in either too little or too much time to complete a "particular movement pattern".

C) It provides no method for pausing the device to give the user a rest. Instead the device would relentlessly signal "particular movement patterns" until such time as the user gave up and stopped using it as a reaction training device as described by Elstein, that is, stopped reacting to its signals.

D) It provides no feedback to the user, in particular, no measure of the time the user took to execute the "particular movement pattern".

22. The examiner objected to **Claims 39 and 40** under 35 USC 103 as unpatentable over Elstein and in view of Chein. The applicant submits that these claims modify **Claim 37,** which describes a device that differs in both function and required elements from the device of Elstein. It would not be obvious to one skilled in the arts to extend a reaction training system as described by Elstein so that it functioned as does the device of the present application, as such an extension would render it inoperable for its original purpose (**Remark 21**). Therefore the applicant submits that **Claims 39 and 40** are valid.

23. The examiner objected to **Claims 41 and 43** under 35 USC 103 as unpatentable over Elstein and in view of Karrenberg. The applicant submits that these claims modify **Claim 37,** which describes a device that differs in both function and required

elements from the devices of Elstein and Karrenberg. It would not be obvious to one skilled in the arts to extend a reaction training system (Elstein) or an interval training system (Karrenberg) so that either functioned as does the device of the present application, as such an extension would render either modified device inoperable for its original purpose (**Remark 21**). Moreover, simply coloring the lights of the device of Elstein or running it on batteries would not convert it functionally into the device of the present application. It would still require the extra elements listed in **Remark 17** and it would still not be fully unpredictable in signal order and duration. Therefore the applicant submits that **Claims 41 and 43** are valid.

24. The examiner objected to **Claims 41** under 35 USC 103 as unpatentable over Elstein and in view of Karrenberg claiming that it would be obvious to one skilled in the arts "to provide signaling lights of different colors." The applicant first would like to clarify exactly why different colored lights are used in the device of the present application. The signal produced by this device is combinatorial. The athlete must be able to distinguish which ring(s) are lit under difficult viewing conditions (at a distance, under poor illumination, and via peripheral vision) or the athlete will not be able to discriminate between the two states having only one lit ring. If the two rings are the same color, and only one is lit, then in order to identify the signal the athlete must either estimate that ring's distance down from the top of the cone or the relative length of the ring of LEDs as viewed from the side. This problem would be further exacerbated if the training field contained cones of slightly different shapes and sizes,

which could easily occur with cones bought at different times and places. By employing colored lights in the rings this problem is eliminated and all 4 signals may be easily determined. Conversely, in the device of Elstein each signal is represented by a single light and the design of the lights (**Figures 1,4**), and the "start position" of the athlete (as in **Figure 1**), ensures that the athlete can readily determine at "start" which light is lit, and so, which signal is present. Since there is no possibility of "signal confusion" in the device of Elstein there exists no reason for one skilled in the arts to extend the device by coloring the lights to eliminate this nonexistent problem. Moreover, if the lights were colored for some other reason (aesthetics perhaps) doing so would not be sufficient to cause the device of Elstein to function as does the device of the present application. It would still require the extra elements listed in **Remark 17** and it would still not be fully unpredictable in signal order and duration. Therefore, the applicant submits that **Claim 41** is valid.

25. The examiner objected to **Claim 42** under 35 USC 103 as unpatentable over Elstein and in view of Boland. The applicant submits that this claim modifies **Claim 37,** which describes a device that differs in both function and required elements from the devices of Elstein and Boland. It would certainly be possible to modify the lights of the device of Elstein to utilize LEDs as in Boland (and many, many other devices), however doing so would not be sufficient to cause the device of Elstein to function as does the device of the present application. It would still require the extra elements

listed in **Remark 17** and it would still not be fully unpredictable in signal order and duration. Therefore, the applicant submits that **Claim 42** is valid.

26. The examiner objected to **Claim 51** under 35 USC 103 as unpatentable over Elstein. The applicant submits that **Claim 51** modifies **Claim 37** which describe a device that differs in both function and required elements from the device of Elstein. It would certainly be possible to modify the device of Elstein to utilize different light combinations to represent different signals as implemented in the present application, however doing so would not be sufficient to cause the device of Elstein to function as does the device of the present application. It would still require the extra elements listed in **Remark 17** and it would still not be fully unpredictable in signal order and duration. It would not be obvious to one skilled in the arts to make all of these changes as the resulting device, that of the present application, would no longer function properly for the role intended by Elstein (**Remark 21**). Therefore, the applicant submits that **Claim 51** is valid.

27. The examiner objected to **Claim 53** under 35 USC 103 as unpatentable over Elstein in view of Boland and further in view of Karrenberg. The arguments of the preceding remark apply here as well. Restating this point once again, the device of the present application is neither a reaction timing device (Elstein, Boland) nor an interval timing device (Karrenberg), so modifying these devices to function as this one does would render them inoperable for their original intended function (**Remark 21**).

Consequently, it would not be obvious to one skilled in the arts to modify them in this manner. Therefore the applicant submits that **Claim 53** is valid.

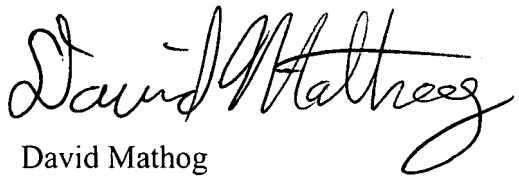
28. The applicant was unclear on the proper format for responding to the section of the Office Action labeled "Response to Arguments" which began on page 9 of the Office Action. However, the applicant has attempted to formulate the remarks above to render these arguments more persuasive in light of the contents of that section.

29. The examiner did not object to the drawings or specification. No changes to these are entered in this response.

30. No new literature has been referenced by the applicant in the remarks

31. The applicant submits that the issues noted by the examiner in the Office Action of April 26, 2006 have been resolved. All claims have been demonstrated to be fully compliant with 35 USC 102; and all claims have been shown not to be obvious extensions of Elstein and so satisfy the conditions of section 35 USC 103; There are major differences between Elstein's device and methods and those of the present application; One skilled in the arts would not obviously extend the teaching of Elstein to encompass the present application as doing so would either eliminate elements required for its original purpose or would introduce concepts outside of the scope of his invention. Accordingly, the applicant submits this amended application in the belief that it is now in full condition for acceptance.

32. (This remark was not present in the original reply of Jul 25, 2006 and addresses an issue in the Office Action of Mar 5, 2007.) The examiner objected to the term "unpredictable" in Claim 37 under section 35 USC 112, in that, "it is unclear to what extent the signaling is unpredictable". One skilled in the arts would recognize that the degree of unpredictability of the present device will depend upon the quality of the method used to generate random numbers to select transition times and device states by occupancy, and as such, is a design parameter that would be set for particular implementations. Minimally, for typical athletic training and related applications the intention is that no observer (the athlete or anybody else) would be able to predict the pattern from past observation, so one skilled in the arts would choose a random number generation method which does not cycle (repeat itself) for at least several hundred million numbers, yielding a pattern far too long and complex for any observer to memorize or recognize, yet easily implemented in software in a modern controller. If a particular application required that the device be unpredictable even under sophisticated cryptoanalysis (perhaps for use in a professional game of some sort) correspondingly more sophisticated random number generation algorithms would be employed.



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